

Clean Copy

1. A system for proactively simulating a processor performance state in a processor without receiving a processor temperature signal comprising:

 a data structure stored in a memory, the data structure being configured to store an address of a GPIO (general purpose input output) block and a set of bit patterns that may be written to the GPIO block, where the GPIO block is configured to control a thermal management signal that can be provided to the processor, and

 a logic operably connected to the memory, the logic being configured:

 to receive a request to establish a desired processor performance state in the processor, where the request is generated in response to a forward looking analysis of a number of instructions per second to be required by the processor, and where the request is received from an operating system that does not have true processor states available;

 to select a bit pattern, the bit pattern being selected from the set of bit patterns, and

 to write the bit pattern to the GPIO (General Purpose Input Output) block to control a frequency and a voltage at which the processor is to operate without performing processor throttling.

2. (Cancelled)

3. The system of claim 1, where the memory is operably connectable to a Basic Input Output System (BIOS) configured to facilitate controlling a processor function.

4. (Cancelled)

5. (Cancelled)

6. The system of claim 1, where the set of bit patterns facilitates simulating two processor performance states that correspond to a higher performance state and a lower performance state.

7. (Cancelled)

8. The system of claim 1, where the thermal management signal comprises a signal placed on a control line available to the processor, where the control line is configured to provide a processor hot signal.

9. The system of claim 1 being incorporated into a computer.

10. The system of claim 1 being incorporated into a printer.

11. (Currently Amended) A system for proactively simulating a processor performance state in a processor that is configured to receive a thermal management signal from an operating system that does not have true processor states available and to selectively change the processor operating frequency and voltage based on the thermal management signal, the system comprising:

a simulation logic configured to produce a simulated thermal management signal, where the simulated thermal management signal is based, at least in part, on a forward looking load determination for the processor,

Docket No. 200314997-1

where the simulation logic comprises:

a data structure stored in a memory, the data structure being configured to store an address of a GPIO (General Purpose Input Output) block and a set of bit patterns that may be written to the GPIO block in the processor, where the GPIO block is configured to control the thermal management signal that can be provided to the processor, and

a logic operably connected to the memory, the logic configured to receive a request to establish a desired processor performance state in the processor, where the request is generated in response to the forward looking load determination for the processor, to select a bit pattern, the bit pattern being selected from the set of bit patterns, and to write the bit pattern to the GPIO block, where the bit pattern controls a frequency and a voltage at which the processor will operate without performing processor throttling;

a thermal management circuit configured to produce an actual thermal management signal; and

a combination logic configured to selectively provide to the processor one and only one of, the actual thermal management signal or the simulated thermal management signal.

12. (Cancelled)

13. (Cancelled)

14. (Currently Amended) A method for proactively simulating a processor performance state for a system that does not have actual processor performance states available, comprising:

Docket No. 200314997-1

receiving a request to establish the processor performance state in a processor, where the request is generated in response to a forward-looking load determination for the processor;

accessing a data store to acquire a set of bit patterns that facilitates controlling a state of a thermal management signal and a thermal management register; and

causing the processor performance state to be simulated without cyclic processor throttling by causing the processor to change its operating frequency and operating voltage in response to the thermal management signal produced in response to writing a member of the set of bit patterns to a General Purpose Input Output (GPIO) block, where the operating frequency and operating voltage are maintained without cyclic throttling, and where the member of the set of bit patterns comprises two or more bits.

15. (Cancelled)

16. (Cancelled)

17. The method of claim 14, where the processor performance state corresponds to one of, a higher performance state, and a lower performance state.

18. (Cancelled)

19. (Cancelled)

20. The method of claim 14, where the thermal management signal comprises a processor hot signal provided to the processor.

Docket No. 200314997-1

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. A system for proactively simulating a processor performance state in a processor without receiving a processor temperature signal comprising:

a data structure stored in a memory, the data structure being configured to store an address of a thermal management register and a set of bit patterns that may be written to the thermal management register in the processor, where the thermal management register is configured to control a thermal management signal that can be provided to the processor, and

a logic operably connected to the memory, the logic being configured:

to receive a request to establish a desired processor performance state in the processor, where the request is generated in response to a forward looking analysis of a number of instructions per second to be required by the processor, and where the request is received from an operating system that does not have true processor states available;

to select a bit pattern, the bit pattern being selected from the set of bit patterns, and

to write the bit pattern to the thermal management register to control a frequency and a voltage at which the processor is to operate without performing processor throttling.